Claims

[c1] A method for sharing data between a relational database and a hierarchical database, comprising:

defining a hierarchical data entity including a plurality of elements;

mapping each of the plurality of elements in the hierarchical data entity to information in a relational dataset contained in a relational database;

transforming the relational dataset information into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure; and

accessing data from the hierarchical data structure corresponding to the relational dataset information in the relational database.

[c2] The method of claim 1, wherein the step of defining a hierarchical data entity comprises defining a hierarchical data entity including a plurality of elements containing a data entity structure and mapping information.

[c3] The method of claim 2, further comprising identifying each of the plurality of elements by an element name without reference to an entity path.

[c4] The method of claim 1, wherein the step of defining a hierarchical data entity comprises defining a hierarchical data entity including a plurality of elements containing a data entity structure and defining a hierarchical map structure corresponding to the hierarchical data entity containing mapping information.

[c5] The method of claim 4, further comprising identifying each of the plurality of elements by an entity path referencing all parent elements in the entity path.

[c6] The method of claim 1, wherein the step of defining a hierarchical data entity comprises defining simple elements and compound elements.

[c7] The method of claim 6, wherein the step of defining a simple element comprises defining an element name and mapped fields.

[c8] The method of claim 6, wherein the step of defining a simple element comprises defining an entity path and mapped fields.

[c9] The method of claim 6, wherein the step of defining a compound element comprises defining an element name, a database name, a database command, and database fields.

[c10] The method of claim 6, wherein the step of defining a compound element comprises defining an entity path, a database name, a database command, and database fields.

[c11] The method of claim 1, wherein the step of mapping each of the plurality of elements comprises:

reading the hierarchical data entity;
determining if a root element is present;
ending the mapping process if no root element is present;
mapping each compound element of the plurality of elements if a root element is present; and
mapping each simple element of the plurality of elements if a root element is present.

[c12] The method of claim 11, wherein the step of mapping each compound element comprises:

selecting a compound element;
specifying a data source for the compound element;
specifying a database command expression for the compound element;
executing the database command expression;
receiving a dataset containing fieldnames from the data source;
adding the dataset fieldnames to a dataset field list in the compound element for enabling simple elements to map to the information in the dataset; and
repeating the above steps for each compound element.

[c13] The method of claim 11, wherein the step of mapping each simple element comprises:

selecting a simple element;
selecting a source dataset fieldname corresponding to the simple element in a dataset field list of a parent element;

specifying data transformation algorithms associated with the simple element; and

repeating the above steps for each simple element.

[c14] The method of claim 1, wherein the step of transforming the relational dataset information comprises:

receiving the mapped plurality of elements;

creating a dataset for each compound element of the plurality of elements that contains a database command expression;

opening the dataset for each compound element;

transforming each compound element in the mapped elements starting with the root element of the mapped elements; and

transforming each simple element of the plurality of elements in the mapped elements.

[c15] The method of claim 14, wherein the step of transforming each compound element comprises:

selecting a compound element;

locating a dataset that is nearest to a compound element;

creating an instance of the compound element for every record in the dataset; and

repeating the above steps for each compound element.

[c16] The method of claim 14, wherein the step of transforming each simple element comprises:

selecting a simple element;

extracting values from each dataset field that map to the simple element;

creating a simple element in the hierarchical data structure that corresponds to the simple map element;

transforming data values contained in the dataset fields by transformation algorithms;

adding the transformed values to other values corresponding to the simple map element; and

repeating the above steps for all simple elements.

[c17] A computer program embodied on a computer-readable medium incorporating the method of claim 1.

[c18] A system for sharing data between a relational and a hierarchical database, comprising:

means for defining a hierarchical data entity including a plurality of elements;

means for mapping each of the plurality of elements in the hierarchical data entity to information in a relational dataset contained in a relational database;

means for transforming the relational dataset information into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure; and

means for accessing data from the hierarchical data structure corresponding to the relational dataset information in the relational database.

[c19] The system of claim 18, wherein the means for defining a hierarchical data entity comprises means for defining a hierarchical data entity including a plurality of elements containing a data entity structure and mapping information.

[c20] The system of claim 19, further comprising means for identifying each of the plurality of elements by an element name without reference to an entity path.

[c21] The system of claim 18, wherein the means for defining a hierarchical data entity comprises means for defining a hierarchical data entity including a plurality of elements containing a data entity structure and means for defining a hierarchical map structure corresponding to the hierarchical data entity containing mapping information.

[c22] The system of claim 21, further comprising means for identifying each of the plurality of elements by an entity path referencing all parent elements in the entity path.

[c23] The system of claim 18, wherein the means for defining a hierarchical data

entity comprises means for defining simple elements and compound elements.

[c24] A system for sharing data between a relational and a hierarchical database, comprising:

a hierarchical data entity having a plurality of elements;

a mapping of each of the plurality of elements in the hierarchical data entity to information in a relational dataset contained in a relational database;

a transformation of the relational dataset information into corresponding mapped elements in the hierarchical data entity for forming a hierarchical data structure; and

a memory containing data from the hierarchical data structure corresponding to the relational dataset information in the relational database.

[c25] The system of claim 24, wherein the hierarchical data entity comprises a plurality of elements containing a data entity structure and mapping information.

[c26] The system of claim 24, wherein the hierarchical data entity comprises a plurality of elements containing a data entity structure and a hierarchical map structure.

[c27] The system of claim 24, wherein the hierarchical data entity comprises simple elements and compound elements.

[c28] The system of claim 27, wherein each simple element comprises an element name and mapped fields.

[c29] The system of claim 27, wherein each simple element comprises an entity path and mapped fields.

[c30] The system of claim 27, wherein each compound element comprises an element name, a database name, a database command, and database fields.

[c31] The system of claim 27, wherein each compound element comprises an entity path, a database name, a database command, and database fields.

[c32] A computer-readable medium containing a data structure for sharing data between relational and hierarchical databases, comprising:

a hierarchical data structure having a plurality of simple and compound elements stored in the memory;

database commands embedded in the compound elements for accessing information in a relational database;

tabular datasets created in the memory for storing the accessed information from the relational database; and

a relationship between the elements of the hierarchical data structure and the tabular datasets.

[c33] The computer-readable medium of claim 32, wherein the compound elements comprise:

an element name property;

a database name property;

a database command expression; and

a database fields property.

[c34] The computer-readable medium of claim 32, wherein the simple elements comprise an element name property and a mapped fields property.